2-D Bar Codes and Biometrics An Affordable Authentication

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Overview

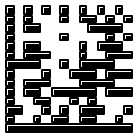
- The Biometric Opportunity
- 2-D Bar Code Options
- Security/Encryption
- Common Biometrics
- What about Smart Cards and LaserCard?
- Implementation

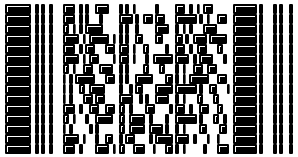
The Biometric Opportunity

- Utilize Auto-ID for biometric applications
  - Separate physical ID possession from the authority to Enter/Proceed
  - Provide automatic operation
  - Verify/Authenticate (1:1), not Identify/Detect (1:N)

2-D Bar Code Options

- ISO, AIAG, EIA, NASA ...
- Approved, tested and open system
  - Data Matrix
  - PDF





- Private and/or closed system
  - DataStrip
  - DataGlyph

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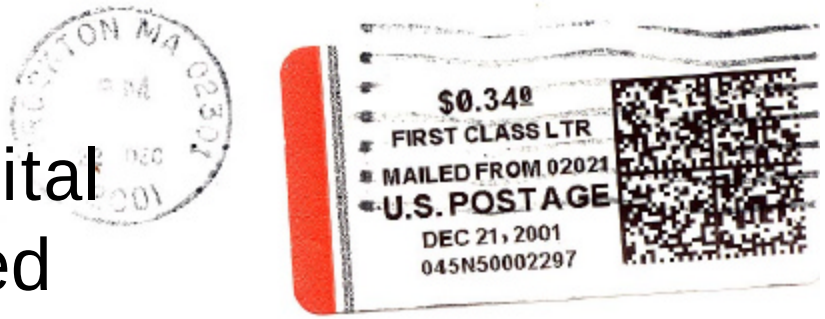
Security/Encryption



- Use of encryption and digital signatures, ensures printed information is secure and unchangeable
- US IBIP postage
- Print at home application fielded using a 128 byte Digital Signature

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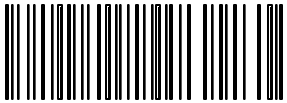
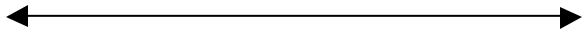
Common Biometric Parameters

- Hand Geometry
- Iris Scan
- Facial Recognition
- Fingerprint Scan

Hand Geometry

- Based on profile of hand
- Changes over time; Usually updated with each use
- Hand is not unique, usually combined with something else
- Smallest signature, 9 bytes!



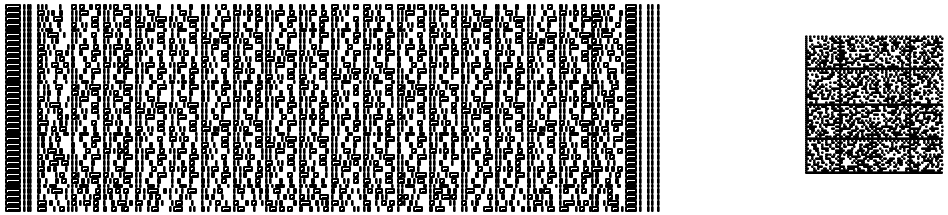


3.0 inches

X-dim of 10 mil, PDF 10% ECC, DMx ECC-200

Iris Scan

- Measure distinct patterns in the iris (over 247 parameters) from camera image
- Not the same as retinal scan, more comfortable to the user
- Generates a 512 byte signature with high accuracy



3.0 inches

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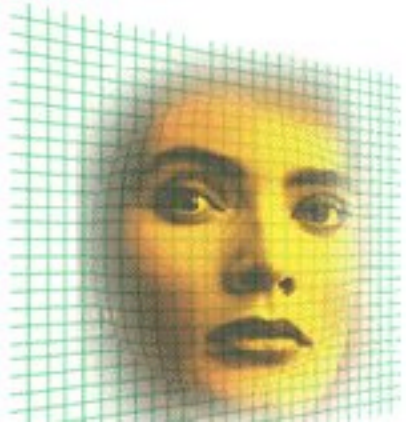
Facial Recognition

- Distinct measurements among facial features
- For 1:1 recognition signature is roughly 300 bytes (smaller signature of 88 bytes used for 1:N searches)



3.0 inches

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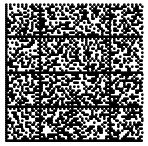
Fingerprint Scan

- Measures over 40 minutiae or correlation of images
- Typical record size of 300 to 800 bytes
- AFIS and others systems based on multiple fingers



3.0 inches

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The Immediate Benefits

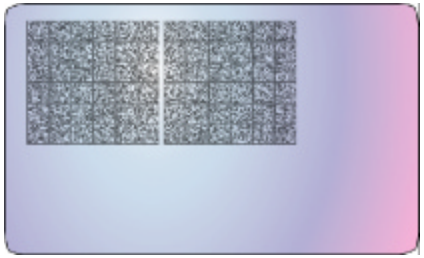
- Self-authenticating
  - Biometric information is encoded and encrypted on an item the person carries with them
  - No database required
    - Secure – nothing to hack
    - Large databases expensive to maintain and protect
    - Interface to database not reliable
    - Protects each individual's personal information
- "Identity theft" cannot occur

Smart Cards and LaserCards?

- Smartcards
  - $$$
  - Technical standards unsettled
  - Reliability unknown
  - e-Beam effect on card electronics
- Lasercard
  - $$
  - Single vendor
  - Read time of 4 seconds

Implementation

- 2-D bar codes allow placement of up to 3K on ID card with existing printing equipment
- Systems are available from multiple vendors
  - ID Trace (RVSI)
  - PassPro (LDC)



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